# Energy Efficiency Behavioral Programs

# 2014 New Year Resolution: A Low-Cost Energy Diet

## Green Communities Webinar Q&A
## January 13, 2014

*(Note: EK = Ellen Katz of Cambridge and KC = Kate Crosby of Action Boxborough Regional School District. No initials denotes an answer provided by the Green Communities Division.)

**General Behavioral Efficiency Questions**

**Q: What has your experience been with lowering the thermostat during the winter?**
A: Most behavior-based programs working with building occupants focus on lighting and plug load. Generally speaking, thermostats are not managed by individual building occupants.

**Q: How do you overcome the challenge of dealing with the mentality of "it's not my money" when you try to get folks to change their behaviors in the workplace?**
A: (EK) This hasn't come up, at least not directly. On the contrary, one employee, a Cambridge resident, said he was glad we were doing this because he wants to see his taxes put to good use. Overall, we believe that support from upper management is important in setting the tone and modeling desired behavior. We may not achieve 100% success, but believe that most people will "do the right thing" if it is easy enough and with supports and encouragement.
(KC) Our experience at Acton-Boxborough and at the case study schools in the *Powering Down* report is similar to what Ellen reports from Cambridge. People readily understand that the cost savings are very valuable because the money can be redirected to needed resources (such as educational supplies) rather than being spent on utility bills. Employees who are local residents also voice their enthusiasm for spending local tax dollars wisely. In general, the challenge involves getting information out and capturing people's attention rather than overcoming resistance.

**Q: Do you see these programs transferring well for multifamily properties and the building managers and residents?**
A: (EK) I can't speak to this directly, but the Cambridge Recycling program ran a four-month pilot to increase recycling at four Cambridge Housing Authority multi-family apartment buildings last year. Recycling at these buildings increased dramatically. We can provide contact information if you would like to learn more about the methods they used and lessons learned.

**Q: Can we use the behavioral energy savings goals as a part of our Energy Manager Grant application?**
A: Yes, DOER considered these energy savings from proposed behavioral programs in evaluating the Energy Manager Grant applications.

**Q: Does anyone know what the energy savings potential is in a behavioral change program if building-wide lighting controls, PC power management software, and energy management systems have been installed which take energy use out of occupant control?**
A: Great question. Presumably, the opportunity for energy efficiency savings has been reduced due to installation of controls and building automation systems. What becomes even more important in these facilities, however, is the training and attention of the building manager. Involving building occupants in managing plug load, including printers, copiers and personal effects, also is still very relevant.

(EK) While installers work hard to focus occupancy sensors on the intended occupants, sensors may still sometimes turn on when someone passes by an office even when the office itself is unoccupied. Therefore, we have encouraged people to continue turning out lights even where occupancy sensors have been installed. In addition, complexities and wiring in

older buildings may result in not all lights having sensors installed. Instructions to occupants will need to be more specific but will still be important.

## Questions on Cambridge's GreenSense Behavioral Efficiency Program

**Q: Is energy a line item in each department's budget? We are trying to determine whether and how to incorporate energy costs of individual departments into their own budgets. We believe this will help motivate department heads to be more accountable for the energy behaviors of their respective employees.**
A: (EK) In Cambridge, as is probably the situation in many municipalities, we have a mix. Many departments pay their own utility bills, while others do not. Paying one's own utility bills definitely provides incentives and accountability to reduce consumption, but will not in itself necessarily lead to that outcome. Many departments are focused on their primary missions of education, public safety, street maintenance, etc., as they should be. But, in conjunction with an energy awareness program that offers technical expertise and support this could work.

**Q: How did you get the FD, PD and DPW to willingly support this program by reporting their gasoline/diesel fuel usage? These departments are not used to reporting these numbers. I think they feel their authority is being challenged.**
A: (EK) It didn't seem to be an issue. Most City vehicles were already fueling up at the DPW yard and their usage is reported through our central fuel management system. At first, departments with their own fuel tanks or who were fueling up at outside vendors did have to scramble to provide consumption details, as they had previously tracked fuel by cost. The City has added stand-alone fuel tanks to the centralized fuel management system to make tracking and accountability easier across the board.

**Q: Cambridge mentions on its "Turn off Lights" signs the amount of greenhouse gases avoided. Was this identified as a motivating goal among staff?**
A: (EK) We didn't receive specific feedback about this, but the planning group believed that it was important to stress both the cost savings and environmental benefits to employees.

**Q: Who did Cambridge use as a consultant?**
A: (EK) For the GreenSense program we used Kilojolts. They are based in Lexington.

## Questions on Acton-Boxborough Regional School District's Power Down Behavioral Efficiency Program

**Q: Does Acton-Boxborough school use MassEnergyInsight, Energy Star Portfolio Manager, or something else to track energy trends and generate reports?**
A: We use EPA's ENERGY STAR Portfolio Manager to track our energy data. We uploaded our benchmark data before MassEnergyInsight was available, so we started with Portfolio Manager and have continued with it. I know the MEI reports are great, but because of some unusual circumstances with utility billing on our main school campus, Portfolio Manager works for us.

**Q: How is Acton-Boxborough school getting daily energy use data? Demand data?**
A: Monthly data is what we use for our behavior-based strategies, and that is also true for the exemplar programs described in the *Powering Down* report. The powerpoint chart indicating hourly values for our high school is drawn from demand management data, but monthly data is what we and others typically rely on for feedback in behavior-based programs.

**Q: (1) Were the kids educated about sustainability in the classroom (not just posters)? And if so, how was this done (as in, what information was given that allowed the program to be so effective, aside from posters and stickers)? (2) Have you integrated energy education into formal school course curriculum?**

A: In both the Acton-Boxborough schools and the schools in the *Powering Down* report, extracurricular teams and clubs have usually been the most effective channel for students to create an impact in reducing energy consumption, and it's a great opportunity for them to practice leadership and build a sense of efficacy. The report provides a "how to" toolkit and many resources for creating an effective team. And yes, there are lots of important links between curriculum and greening our school district and we've been actively working to foster this integration at Acton-Boxborough.

**Q: Is there a minimum age for students to get involved with energy savings efforts in school?**

A: Not really! Even younger elementary school students are enthusiastic about helping with energy conservation, and can help generate momentum and spread awareness in a school setting.

**Q: Have you done much evaluation of "dark schools" programs?**

A: We are working to eliminate or minimize interior lighting after hours. We continue to utilize exterior lighting for parking lots, etc. and have upgraded these fixtures with new energy efficient technology (induction or LED).